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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,899	09/09/2003	Christian Peters	P2001,0182	5645

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EXAMINER

LE, THAO X

ART UNIT PAPER NUMBER

2814

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/657,899	Applicant(s) PETERS, CHRISTIAN	
	Examiner Thao X Le	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>09/09/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6469325 to Ishizuka et al.

Regarding claim 1, Ishizaka discloses a thyristor structure in fig. 17, comprising: a first terminal 15ps, column 18 line 23, formed as a first region having a first conductivity type; a second region 13n, column 17 line 54, of a second conductivity type adjoining said first region 15ps; a third region 13p, column 17 line 54, of the first conductivity type adjoining said second region 13n and having a common surface with said second region 13p; a second terminal 15ns, column 18 line 62, functioning as a fourth region 15ns formed of the second conductivity type, and adjoining said third region 13p; auxiliary electrodes 15ng/15pg, column 18 line 29 and 65, disposed on said common surface and each adjoining one of said second and third regions 13n/13p; and a control terminal 14p, column 18 line 6, for controlling the thyristor structure by an applied current embodied in one of said second region 13n and said third region 13p.

Regarding claim 2, Ishizaka discloses the thyristor structure according to claim 1, wherein said auxiliary electrodes are each formed from a conductive region made of polysilicon,

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column 18 line 65, and an auxiliary oxide insulating, column 18 line 64, said conductive region from said common surface.

Regarding claims 3, 6, Ishizaka discloses an over voltage protection configuration in fig. 17 and 29, comprising: a thyristor structure, column 8 line 45, containing; a first terminal 15ps, fig. 17, formed as a first region 15ps having a first conductivity type; a second region 13n of a second conductivity type adjoining a first region 15ps, a third region 13p of the first conductivity type adjoining said second region 13n and having a common surface with said second region 13n, fig. 17, a second terminal 15ns functioning as a fourth region 15ns formed of the second conductivity type, a component to be protected 32, fig. 29, disposed in an electrically conductive manner between said first terminal and said second terminal; auxiliary electrodes 15ng/15pg disposed on said common surface and each adjoining one of said second and third regions; and a control terminal 14p, fig. 17, for controlling the thyristor structure by an applied current embodied in one of said second region 13n and said third region 13p; and an over voltage detector 31 connected to and detecting an over voltage across the component 32 to be protected.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6469325 to Ishizuka et al. in view of US 4695916 to Satoh et al.

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Regarding claim 5, Ishizaka does not disclose the over voltage protection configuration according to claim 3, wherein a supply voltage of the component to be protected is connected to said first terminal and to said second terminal.

However, Satoh reference discloses the over voltage protection configuration in fig. 9 wherein a supply voltage of the component 11 to be protected is connected to said first terminal 12 and to said second terminal 13. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the parallel connection of the thyristor and the protecting component teaching of Satoh with Ishizaka's device, because it would have prevented the generation of a traverse mode voltage as taught by Satoh, column 5 line 50-55.

Regarding claim 4, Ishikawa discloses the over voltage protection configuration according to claim 3, wherein said control terminal 14p forms a fifth region 14p and is formed of the first conductivity type, said fifth region 14p having a higher conductivity than said third region 13p.

But Ishizuka does not disclose the fifth region 14p having a higher conductivity than said third region 13p.

However, Ishizuka discloses region 13p is a well region while region 14P is a contact region. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the teaching of Ishikawa as claim, because such high doping concentration of the region than the well region is typical in the art, see Ker (5637900), fig. 8.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thao X. Le
11 Nov. 2004

LONG PHAM
PRIMARY EXAMINER